

IN THE CLAIMS:

Please amend the claims as follows:

1. (Withdrawn)

2. (Withdrawn)

3. (Currently Amended) A method of feeding a first ruminant, which comprises feeding the ruminant an ~~isolated~~ microorganism comprising a ~~P~~propionibacteria strain selected from the group consisting of strains P169, P170, P179, P195, and P261, ~~and~~ genetic equivalents thereof.

4. (Currently Amended) ~~A~~The method of claim 3, wherein the strain comprises strain P169.

5. (Currently Amended) ~~The~~A method of claim 3, wherein the first ruminant ~~fed~~ is a bovine.

6. (Currently Amended) ~~The~~A method of claim 3, wherein the first ruminant is fed the microorganisms such that the amount of microorganism delivered to the first ruminant is about  $6 \times 10^9$  CFU to about  $6 \times 10^{12}$  CFU/animal/day.

7. (Currently Amended) ~~The~~A method of claim 6, wherein the first ruminant is fed the microorganisms such that the amount of microorganism delivered to the first ruminant is about  $6 \times 10^{11}$  CFU/animal/day.

8. (Currently Amended) ~~A-The~~ method of claim 3, wherein the first ruminant is fed 17 g of a 1:10 mixture of the microorganism, which has been freeze-dried and which is at a concentration of  $3.5 \times 10^{10}$  CFU/g, and a carrier on a daily basis.

9. (Currently Amended) ~~The~~A method of claim 3, wherein the first ruminant is fed the microorganism from -2 to 12 weeks postpartum.

B1 10. (Currently Amended) A method of feeding a first ruminant, which comprises:  
feeding to the first ruminant an isolated-microorganism of the genus

*Propionibacterium*,

after the feeding, testing the first ruminant for at least one of energy balance,  
plasma non-esterified fatty acids levels, and plasma leptin level,

wherein the feeding of the microorganism increases at least one of energy  
balance, plasma non-esterified fatty acids levels, and plasma leptin level in the ruminant  
fed the microorganism when compared to the respective energy balance, plasma non-  
esterified fatty acids levels, and plasma leptin level in ~~the~~ a second ruminant ~~when~~ not fed  
the microorganism.

depts  
ruminants?  
sheep  
&  
cows?

11. (Currently Amended) ~~A~~The method of claim 10, wherein the energy balance is increased.

12. (Currently Amended) ~~The~~A method of claim 10, wherein the plasma non-esterified fatty acids levels are increased.

13. (Currently Amended) ~~The~~A method of claim 10, wherein the plasma leptin level is increased.

14. (Currently Amended) ~~The~~A method of claim 10, wherein the microorganism fed comprises *P. acidipropionici* or *P. jensenii*.

15. (Currently Amended) ~~The~~A method of claim 14, wherein the microorganism fed comprises a ~~P~~propionibacteria strain selected from the group consisting of strains P169, P170, P179, P195, and P261, ~~and genetic equivalents thereof~~.

16. (Currently Amended) ~~A~~The method of claim 15, wherein the *P. acidipropionici* fed comprises strain P169.

17. (Currently Amended) ~~The~~A method of claim 10, wherein the first and second ruminants ~~fed is~~are bovines.

18. (Currently Amended) TheA method of claim 10, wherein the first ruminant is fed the microorganism at a level such that the first ruminant is dosed daily with about  $6 \times 10^9$  CFU to about  $6 \times 10^{12}$  CFU/animal/day.

19. (Currently Amended) TheA method of claim 18, wherein the first ruminant is fed the microorganism at a level such that the ruminant is dosed daily with about  $6 \times 10^{11}$  CFU/animal/day.

20. (Currently Amended) TheA method of claim 18, wherein the first ruminant is fed the microorganism until populations of  $10^5$  to  $10^8$  CFU/ml ruminal fluid are established in the rumen of the first animal.

21. (Currently Amended) TheA method of claim 10, wherein the first ruminant is fed 17 g of a 1:10 mixture of the microorganism, which has been freeze-dried and which is at a concentration of about  $3.5 \times 10^{10}$  CFU/g, and a carrier on a daily basis.

22. (Currently Amended) TheA method of claim 10, wherein the first ruminant is fed the microorganism from -2 to 12 weeks postpartum.

23. (Currently Amended) A method of enhancing the protein content of milk produced by a first ruminant, the method comprising:

- (a) feeding an isolated microorganism of the genus *Propionibacterium* to the first ruminant; and
- (b) milking the first ruminant; and
- (c) determining a percent of protein in a milk produced after the first ruminant is fed the microorganism, wherein to produce milk, the percent of protein in the milk produced by the first ruminant fed the microorganism being is greater than the percent of protein in a milk produced by the second ruminant when not fed the microorganism.

24. (Currently Amended) TheA method of claim 23, wherein the percent of fat in the milk produced by the first ruminant fed the microorganism being is greater than the percent of fat in the milk produced by the second ruminant when not fed the microorganism.

25. (Currently Amended) TheA method of claim 23, wherein the percent of solids-non-fat in the milk produced by the first ruminant fed the microorganism being is substantially greater than the percent of solids-non-fat in milk produced by the second ruminant when not fed the microorganism.

26. (Currently Amended) TheA method of claim 23, wherein the first ruminant is fed the microorganism at a level such that the first ruminant is dosed daily with about  $6 \times 10^9$  CFU to about  $6 \times 10^{12}$  CFU/animal/day.

27. (Currently Amended) TheA method of claim 26, wherein the first ruminant is fed the microorganism at a level such that the first ruminant is dosed daily with about  $6 \times 10^{11}$  CFU/animal/day.

28. (Currently Amended) TheA method of claim 23, wherein the first ruminant is fed the microorganism from -2 to 12 weeks postpartum.

29. (Currently Amended) TheA method of claim 23, wherein the first and second ruminants ~~fed is~~ are bovines.

30-40 (Withdrawn)

31 41. (Currently Amended) TheA method of claim 3, further comprising:  
\_\_\_\_\_ after feeding the first ruminant the microorganism, testing the first ruminant for at least one of energy balance, plasma non-esterified fatty acids levels, and plasma leptin level;  
\_\_\_\_\_ wherein the feeding of the microorganism increases at least one of energy balance, plasma non-esterified fatty acids levels, and plasma leptin level in the first ruminant ~~fed the microorganism~~ when compared to the respective energy balance, plasma non-esterified fatty acids levels, and plasma leptin level in ~~the~~ a second ruminant ~~when~~ not fed the microorganism.

42. (Currently Amended) TheA method of claim 41, wherein the energy balance is increased.

43. (Currently Amended) TheA method of claim 41, wherein the plasma non-esterified fatty acids levels are increased.

44. (Currently Amended) TheA method of claim 41, wherein the plasma leptin level is increased.

45. (Currently Amended) TheA method of claim 3, wherein the first ruminant is fed the microorganism until populations of  $10^5$  to  $10^8$  CFU/ml ruminal fluid are established in the rumen of the first ruminant.

B  
46. (Currently Amended) ~~A~~The method of claim 3, further comprising:  
after feeding the first ruminant, testing a protein content of a milk produced by the  
first ruminant, *not female - not lactating*

wherein a~~the~~ milk produced by the first ruminant after the feeding of ~~fed~~ the microorganism has an enhanced protein content when compared to a milk produced by ~~the a second~~ ruminant ~~when it is not fed the isolated~~ microorganism.

47. (Currently Amended) TheA method of claim 3, further comprising:

\_\_\_\_\_ after feeding the first ruminant, testing a fat content of a milk produced by the  
first ruminant;

NAB

\_\_\_\_\_ wherein ~~a~~ the milk produced by the first ruminant after the feeding of the  
microorganism has a higher percent of fat when compared to a milk produced by ~~the~~  
second ruminant ~~when it is not~~ fed the ~~isolated~~ microorganism.

WAB

48. (Currently Amended) ~~A~~ The method of claim 3, further comprising:

NAB

\_\_\_\_\_ after feeding the first ruminant, testing a fat content of a milk produced by the  
first ruminant;

\_\_\_\_\_ wherein ~~a~~ the milk produced by the first ruminant after the feeding of the  
microorganism has a substantially greater percent of solids-non-fat when compared to a  
milk produced by ~~the~~ second ruminant ~~when it is not~~ fed the ~~isolated~~ microorganism.

49. (Currently Amended) A method of feeding a first ruminant, comprising feeding  
the first ruminant an ~~isolated~~ microorganism comprising a Propionibacteria strain  
having a group I profile produced by Xba I digests of genomic DNA as shown in Figures  
1-2 and Table 3.

NO

50. (Currently Amended) ~~A~~ The method of claim 49, wherein the ~~strain~~  
microorganism comprises a Propionibacteria strain selected from the group consisting of  
strains P169, P170, P179, P195, and P261.

is



51. (Currently Amended) ~~A-~~The method of claim 50, wherein the strain comprises strain P169.

52. (Currently Amended) ~~A-~~The method of claim 49, wherein the first ruminant ~~fed~~ is a bovine.

53. (Currently Amended) ~~A-~~The method of claim 49, wherein the first ruminant is fed the microorganisms such that the amount of microorganism delivered to the first ruminant is about  $6 \times 10^9$  CFU to about  $6 \times 10^{12}$  CFU/animal/day.

54. (Currently Amended) ~~A-~~The method of claim 53, wherein the first ruminant is fed the microorganisms such that the amount of microorganism delivered to the first ruminant is about  $6 \times 10^{11}$  CFU/animal/day.

55. (Currently Amended) ~~The~~A method of claim 49, wherein the first ruminant is fed 17 g of a 1:10 mixture of the microorganism, which has been freeze-dried and which is at a concentration of  $3.5 \times 10^{10}$  CFU/g, and a carrier on a daily basis.

56. (Currently Amended) ~~A-~~The method of claim 49, wherein the first ruminant is fed the microorganism from -2 to 12 weeks postpartum.

57. (Currently Amended) ~~A-~~The method of claim 49, further comprising:

\_\_\_\_\_ after feeding the first ruminant the isolated microorganism, testing the first ruminant for at least one of energy balance, plasma non-esterified fatty acids levels, and plasma leptin level;

\_\_\_\_\_ wherein the feeding of the microorganism increases at least one of energy balance, plasma non-esterified fatty acids levels, and plasma leptin level in the ruminant fed the microorganism when compared to the respective energy balance, plasma non-esterified fatty acids levels, and plasma leptin level in the second ruminant ~~when~~ not fed the microorganism.

58. (Currently Amended) ~~A-~~The method of claim 57, wherein the energy balance is increased.

B/ 59. (Currently Amended) ~~A-~~The method of claim 57, wherein the plasma non-esterified fatty acids levels are increased.

60. (Currently Amended) ~~A-~~The method of claim 57, wherein the plasma leptin level is increased.

61. (Currently Amended) ~~A-~~The method of claim 49, wherein the first ruminant is fed the microorganism until populations of  $10^5$  to  $10^8$  CFU/ml ruminal fluid are established in the rumen of the first ruminant.

62. (Currently Amended) ~~A~~The method of claim 49, wherein a milk produced by the

first ruminant ~~fed the microorganism~~ has an enhanced protein content when compared to

a milk produced by ~~the~~ a second ruminant ~~when it is not fed the isolated microorganism~~.

63. (Currently Amended) ~~A~~The method of claim 49, wherein a milk produced by the

first ruminant ~~fed the microorganism~~ has a higher percent of fat when compared to a milk

produced by ~~the~~ a second ruminant ~~when it is not fed the isolated microorganism~~.

64. (Currently Amended) ~~The~~A method of claim 49, wherein a milk produced by the

ruminant fed the microorganism has a substantially greater percent of solids-non-fat

when compared to a milk produced by ~~the~~ a second ruminant ~~when it is not fed the~~

~~isolated microorganism~~.